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Complete allocation sampling: An efficient and easily implemented adaptive sampling design.

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Adaptive sampling designs are becoming increasingly popular in environmental science particularly for surveying rare and aggregated populations. There are many different adaptive survey designs that can be used to estimate animal and plant abundances. The appealing feature of adaptive designs is that the field biologist gets to do what innately seems sensible when working with rare and aggregated populations – field effort is targeted around where the species is observed in the first wave of the survey. However there are logistical challenges of applying this principle of targeted field-effort whilst remaining in the framework of probability-based sampling. We propose a simplified adaptive survey design where entire strata are sampled. This design incorporates both ideas of targeting field effort and being logistically feasible. We show with a case study population of rockfish that complete allocation stratified sampling is very efficient design.